415-367-7781 October 30, 1995

Donald S. Lambert 1301 Kiblinger Place Auburn, IN 46706-1372

Hi Don.

Enclosed is your copy of KEYWORD V6.0, the latest and greatest version. Actually I messed up in the IKI article in refering to Keyword V2.0, should been V6.0. When writing the article, I forgot that the latest version is V6.0 and not V2.0.

The version of KEYWORD that you have is probably a very early one, and as you suspect, it was probably improperly saved. The latest version is not fussy about when it gets saved, and is in all ways much better than the original. Will there be a V7.0? Well, probably... if and when I think of any improvements.

The only real problem with KEYWORD V6.0 (and all earlier versions) is that it's not compatible with BASIC programs which use non-relocatable machine-code in a REM statement. Right now I can't think of any solution to that problem other than modifying such BASIC programs, or rather, the code in their REM statements.

You'll note that no eprom or schematics of the IKI are enclosed. That's because, since the article was written, I have come up with some ideas for improvements to the IKI design, and I want to try those out before (more or less) finalizing the design.

You WILL get the IKI eprom and documentation as soon as I'm sure that they are as good as they can be, for the present.

I have great plans for the future. I have finally (after years of effort) succeeded in modifying my DEVPAC assembler and disassembler so that they can cope with LARGE machine-code programs. It is now possible, for the first time ever, to re-source, re-write and re-assemble LARGE machine-code programs, such as Mscript, the Larken DOS, and the 2068 and Spectrum ROMs. I will now be able to do things that I have only dreamed of being able to do. Great things are coming, in the fullness of time, and yes, Timex/Sinclair still lives!

Best regards,

Jock

October 1995

**** KEYWORD V6.0 ****

-- for Oliger Disk and 2068 or Spectrum --

WHAT IT DOES: KEYWORD allows you to write and edit BASIC programs without having to change cursor modes or hunt for keywords on the keyboard. KEYWORD is very handy in case you have a non-standard keyboard without keywords on the keys.

LOADING KEYWORD: Reset the computer, then:

LOAD /"KWORD"

The BASIC loader loads and activates the KEYWORD machine code, lets you make a backup if desired, and provides a few reminders of how to use Keyword.

Once KEYWORD in activated, you may write, load, edit or run other software. On the 2068, the BASIC loader can be deleted with the command DELETE, or DELETE 1,9999. The Spectrum lacks the DELETE command, so to erase the BASIC you might load a short "dummy" program. Don't use NEW, since this would erase KEYWORD.

When KEYWORD has been loaded and activated, it resides in memory below the BASIC program, and is transparent to the user.

Another method of loading KEYWORD is to load just the machine code, with the command LOAD /"KW6" CODE Then PRINT USR 60000 to activate KEYWORD, one time only. The BASIC loader isn't really needed, and is more of an introduction.

MEMORY USAGE

Once the KEYWORD machine-code has been loaded and activated, memory from 60000 to 60999 is free for other uses. KEYWORD then occupies locations 23885 to 24297 on the 2068, or 23755 to 24155 on the Spectrum. KEYWORD cannot be saved and reloaded from these locations directly and still work.

KEYWORD will remain available for use until a NEW command is given or the computer is turned off. CLEAR will not harm it.

TURNING KEYWORD OFF/ON

You may turn KEYWORD off or on as often as you like, by pressing SYMBOL-SHIFT + ENTER. This is best done when you are not in the middle of editing a BASIC statement or line.

When Keyword is turned off or on, you will hear a low-pitched beep if it was turned OFF, or a high-pitched beep if it was turned ON.

USING KEYWORD

When Keyword is OFF, the computer operates just as usual. When Keyword is ON, the K, L and C cursors are replaced with Keyword's own special cursor ">" or "<". It is irrelevant whether ">" or "<" appears as the cursor. Unfortunately the status of CAPS LOCK cannot be reported by the cursor.

You can get the E and G cursors in the usual manner. Thus, with Keyword ON, you can still use extended-mode keywords and graphics mode, and imbedded screen controls. SYMBOL-SHIFT may still be used for keywords like AT. But "main keywords" (that is, those on the centers of the keys, such as PRINT) must be typed in, using the ">" cursor.

Though you MAY use extended mode or symbol-shift for keywords such as STOP or CAT, you don't HAVE to. ALL keywords may be spelled out, including those used by your disk system, both in immediate command, and when writing or editing BASIC lines. Exception: when typing the OPEN # keyword, type only OPEN and not the '#' symbol. See note on last page.

When you press ENTER, any keywords that you have typed in accordance with the rules below will be 'tokenized' into their standard Sinclair forms.

KEYWORD SYNTAX RULES

- 1. Keywords may be typed in upper or lower case.
- 2. Keywords must be spelled correctly. Thus, RANDOMISE will cause a syntax error. RANDOMIZE is correct.
- 3. There must be a space between a keyword and anything following it. Thus Print: Print is correct, while PRINT: PRINT is incorrect.
- 4. There may be, but need not be, spaces BEFORE a keyword. Thus 10go to 100 is quite legal, as is $10 \ \mathrm{GO} \ \mathrm{TO} \ 100$
- 5. LONG KEYWORDS of more than 4 characters may be shortened by

typing only the first 4 (or more) characters. Thus, rand or Random produce RANDOMIZE, but Randim would be wrong, since it violates Rule 2. Whatever you type must be correct.

KEYWORD SYNTAX ERRORS are indicated by a flashing question mark after the first letter of the erroneous keyword. Editing is as usual, to correct the error. The most common error is not typing a SPACE after a keyword.

COMPATIBILITY: KEYWORD is compatible with all disk sytems, and with MOST software, including OS-64 and Mscript. If you find something it won't work with, please let me know. I may be able to help.

Keyword moves the BASIC program area upward in memory, by 6 bytes on the 2068 and by 400 bytes on the Spectrum. Therefore, Keyword cannot be used with any program which requires the system variable PROG to be at its standard turn-on value, or with programs which use non-relocatable machine code in a Line 1 or Line 0 REM statament.

The TECHNICAL DETAILS of how Keyword works are beyond the scope of this document. Though the machine code is short, its interleave with the operating system is extremely complex. The source listing of the Keyword machine code is available to those who need it, on paper or disk (Devpac format), for \$5.

I believe that KEYWORD V5 is bug-free, but if you should experience any problems with it, please let me know. Thanks!

**** CORRECT SPELLING OF 2068 KEYWORDS **** (shown in upper case just for clarity)

ABS ACS ASN AND AT ATN ATTR BEEP BIN BORDER BRIGHT CAT CHR\$ CIRCLE CLEAR	CLS CODE CONTINUE COPY COS DATA DEF FN DELETE DIM DRAW ERASE EXP FLASH FN FOR	FREE GO SUB GO TO IF IN INK INKEY\$ INPUT INT INVERSE LEN LET LINE LIST LLIST	*	LOAD LPRINT MOVE NEW NEXT NOT ON ERR OPEN # OR OUT OVER PAPER PAUSE PEEK PI	POINT POKE PRINT RANDOMIZE READ REM RESET RESTORE RETURN RND RUN SAVE SCREEN\$ SGN SIN	STEP STICK STOP STR\$ SQR TAB THEN TO VAL VAL\$ VERIFY <= <>
CLEAR CLOSE #	FOR FORMAT	LLIST LN		PI PLOT	SIN SOUND	
				1 201	SOUTH	

Examples of shortened keywords:

NOTE *: In the special case of the "OPEN #" keyword, you should NOT type the '#' symbol! Thus, with Keyword ON, you should type 'open 4' to get OPEN #4. This is because Keyword V6.0 sees a space after 4 characters as the end of the keyword.

VERSION NOTES: Keyword V6.0 replaces V5.0 and corrects a bug in V5.0 which prevented four-letter keywords terminating in a punctuation mark (such as CHR\$ and VAL\$) from being recognized as valid keywords.

*** end ***